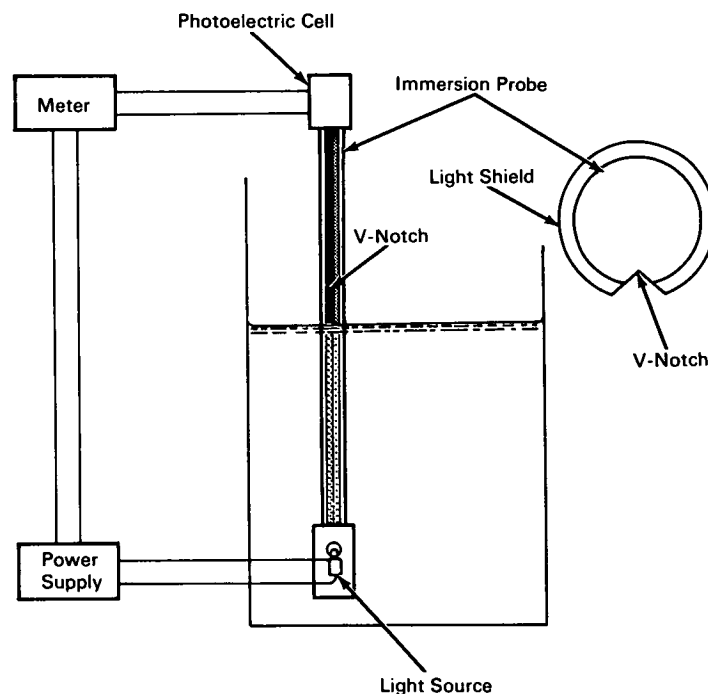


NASA TECH BRIEF



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Photoelectric System Continuously Monitors Liquid Level



The problem: To devise a simple photoelectric system for continuously monitoring the level of a transparent liquid in a tank. The system must operate automatically without moving parts and provide output signals to a remote recorder.

The solution: A system employing an immersion probe that presents a depth-sensitive optical transmission path between a light source and a photoelectric cell.

How it's done: The system consists of a light source, a light-transmitting rod or probe, a photoelectric cell, a power supply, and a readout meter, A

longitudinal V-notch cut into the probe is roughened (like a ground-glass surface) to provide a lateral light-leakage path when the notched surface is wet by the liquid. An internally polished shield prevents leakage of extraneous light from or into the probe.

The amount of light leaking out of the notch depends on the depth and optical properties of the liquid in the tank. The amount of light which does not leak through the notch and is therefore transmitted to the photoelectric cell will increase as the liquid level falls. The light intensity detected by the photoelectric cell is thus a quantitative function of liquid level which can be read out on a calibrated meter.

(continued overleaf)

Note: Inquiries concerning this invention may be directed to:

Technology Utilization Officer
Marshall Space Flight Center
Huntsville, Alabama, 35812
Reference: B65-10382

Patent status: NASA encourages the immediate commercial use of this invention. It is owned by NASA and inquiries about obtaining royalty-free rights for its commercial use may be made to NASA, Code AGP, Washington, D.C., 20546.

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Marshall Space Flight Center
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